PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-128696
(43)Date of publication of application : 09.05.2000

(51)Int.Cl. C30B 29/12
C30B 33/02
G02B 1/02

(21)Application number : 10-295554
(22)Date of filing : 16.10.1998

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(54) FLUORIDE SINGLE CRYSTAL-MADE RAW MATERIAL FOR MAKING OPTICAL ELEMENT AND PRODUCTION OF THE SAME RAW MATERIAL

(57)Abstract:
PROBLEM TO BE SOLVED: To make birefringence value of a raw material for making an optical element be lowered by cutting out the above raw material from fluoride single crystal ingot prepared by crystal growth so as for {111} crystal face to form parallel two surfaces and then by heat-treating the raw material.
SOLUTION: By cutting out a raw material from fluoride single crystal ingot so as for {111} crystal face to form parallel two surfaces and then by heat-treating the raw material for making an optical element, the birefringence value can be lowered down ≤3 nm/cm. When making the aberration of an optical system to be lowered as much as possible using optical elements prepared from the raw material, the number of sheets of optical elements (which can be prepared from a raw material) capable of being used for an optical system can be increased. And the birefringence value can be lowered even when the raw material has a la caliber of ≥120 mm diameter. Calcium fluoride or barium fluoride is preferably used as the fluoride single crystal.

LEGAL STATUS
[Date of request for examination]
[Date of sending the examiner's decision of rejection]
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]
[Date of final disposal for application]
[Patent number]
[Date of registration]
[Number of appeal against examiner's decision of rejection]
[Date of requesting appeal against examiner's decision of rejection]
[Date of extinction of right]